

FORENSIC SCIENCE DICTIONARY

VOCAB. WORD	DEFINITION
abrasion mark	a mark produced when a surface slides across another
agglutination	the clumping of molecules or cells caused by an antigen-antibody reaction
algor mortis	the cooling of body temperature after death
allele	an alternate form of a gene; for example, a gene for human eye color may have alleles that cause blue or brown eyes
amorphous (fiber)	without a defined shape; fibers composed of a loose arrangement of polymers that are soft, elastic, and absorbing (for example, cotton)
amorphous (glass)	without shape or form; refers to having particles that are arranged randomly instead of in a definite pattern
anabolic steroid	man-made drug that has similar effects to testosterone in the body
analytical skills	the ability to identify a concept or problem, to isolate its component parts, to organize information for decision making, to establish criteria for evaluation, and to draw appropriate conclusions
anthropology	the scientific study of the origin, behavior, as well as the physical, social and cultural development of humans
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antibodies	proteins secreted by white blood cells that attach to antigens as an immune response
antigen	any foreign molecule or cell in the body that triggers an immune response to produce antibodies
antigen-antibody response	a reaction in which antibodies attach to antigens to bind foreign substances
arch	a fingerprint pattern in which the ridge pattern originates from one side of the print and leaves from the other side
autolysis	the spontaneous breakdown of cells as they self-digest
ballistics	the science that studies the motion, behavior, and effects of projectiles; most often bullets and firearms
barrel	the long, metal tube that guides a projectile out of a firearm
breech	the end of the barrel attached to the firing mechanism of a firearm where the cartridge is loaded and unloaded
bullet	the projectile that is sent flying when a firearm is shot
caliber	a measure of the inside diameter of a firearm barrel
cartridge	a case that holds a bullet, primer powder, and gunpowder
case law	The body of law made up of judicial opinions and precedents

cause of death	the immediate reason for a person's death (examples: heart attack, drowning, kidney failure, etc.)
cell- surface protein	protein embedded in the cell membrane
chain of custody	a written record of all people who have had possession of an item of evidence
chromosome	an organized structure of DNA and protein found in cells that contains the genetic code of an individual
chronic exposure	continued exposure to toxins over a long period of time
circumstantial evidence	indirect evidence; evidence used to imply a fact but not prove it directly
class evidence	material that connects an individual or thing to a group that share similar characteristics
comparison microscope	a compound microscope that allows the side-by-side comparison of hair samples
control sample	material that comes from a proven or known source
controlled substance	a drug or other chemical compound whose manufacture, distribution, possession, and use is regulated by the legal system
core	a center of a loop or whorl pattern
cortex	the middle layer of the hair shaft that provides strength and contains granules of color pigment
cortical fusi	Irregularly shaped air spaces in the cortex of hair
counterfeiting	the production of an imitation of currency, works of art, documents, and name-brand look-alikes for the purpose of deception
crime scene	any place where evidence maybe located to help explain events
crime-scene investigation	a multidisciplinary approach in which scientific and legal professionals work together to solve a crime
crime-scene reconstruction	a hypothesis of the sequence of events from before the crime was committed through its commission
criminalistics	the examination of physical evidence; the term forensics may also include broader areas of investigation
crystalline	regularly shaped; fibers composed of polymers packed side by side, which make it stiff and strong (for example, flax)
cuticle	the tough, clear, outer covering of a hair composed of overlapping scales
cutting mark	a mark produced along the edge as a surface is cut
dactylscopy	the study of fingerprints
death	the cessation, or end, of life
decomposition	the process of rotting and breaking down
deductive reasoning	deriving the consequences from the facts using a series of logical steps

delta	a triangular ridge pattern with ridges that go in different directions above and below a triangle; found in all loop and whorl patterns
density	the ratio of the mass of an object to its volume, expressed by the equation: density = mass / volume
depressant	a drug or other substance that slows the activity of vital organs of the body
direct evidence	evidence that (if true) proves an alleged fact, such as an eyewitness account of a crime
direct transfer	the passing of evidence, such as a fiber, from victim to suspect or vice versa
DNA fingerprint	pattern of DNA fragments obtained by examining a person's unique sequence of DNA base pairs
DNA probe	a molecule labeled with a radioactive isotope, dye, or enzyme that is used to locate a particular sequence or gene on a DNA molecule
document analysis	the examination of questioned documents with known material for a variety of analyses, such as authenticity, alterations, erasures, and obliterations
document expert	a person who scientifically analyzes handwriting
drug	a chemical substance that affects the processes of the mind or body; a substance used in the diagnosis, treatment, or prevention of a disease; a substance used recreationally for its effects on the mind or body
electrophoresis	a method of separating DNA fragments according to their size and charge using an electric current passed through a gel containing the samples
entomology	the study of insects
epiphysis	the presence of a visible line that marks the place where cartilage is being replaced by bone
erythrocyte	red blood cell
evidence	anything that tends to establish or disprove a fact; can include documents, testimony, etc.
exemplar	a standard document of known origin and authorship used in handwriting analysis
eyewitness	a person who has seen someone or something and can communicate these facts
fact	a statement or assertion of information that can be verified
fiber	the smallest indivisible unit of a textile; must be at least 100 times longer than wide. Usually made up of many filaments twisted or bonded together.
filament	a single strand of material, twisted with other filaments to make thread
fingerprint	an impression left on any surface that consists of patterns made by ridges on the tip of a finger
firearm	a weapon capable of firing a projectile using a confined explosive as a propellant
first responder	the first police officer to arrive at a crime scene
forensic	relating to the application of scientific knowledge to legal questions
forensic anthropology	study of the human skeletal system for purposes of identifying unknown remains
forensic entomology	the study of insects as they pertain to crime scene investigation

forgery	the making, adapting, or falsifying of documents or other objects with the intention of deceiving someone
fraudulence	when a financial gain accompanies a forgery
fully automatic	a firearm with a clip fed mechanism that fires repeatedly as long as the trigger is pressed
gene	segment of DNA in a chromosome that contains information used to produce a protein
glass	a hard, amorphous, transparent material made by heating a mixture of sand and other additives
gunshot residue (GSR)	the tiny particles expelled from a firearm when it is fired.
hair follicle	the actively growing root or base of a hair
indentation mark	a mark or impression made by a tool on a softer surface
indict	to formally accuse a person of a crime
individual evidence	a material that can be related to a single source
inorganic	refers to substances not composed primarily of hydrocarbons (hydrogen and carbon)
instar	one of the three larval stages of insect development
joints	locations where bones meet
keratin	a type of fibrous protein that makes up the majority of the cortex of a hair
lands and grooves	the ridges (lands) and depressions (grooves) found on the inside of a firearm's barrel that are created when the firearm is manufactured
larva (plural larvae)	immature form of an animal that undergoes metamorphosis (for example, a maggot)
latent fingerprint	a hidden fingerprint made visible through the use of powders or other techniques
latent impressions	hidden impression requiring special techniques to be visualized
leaded glass	glass containing lead oxide
leukocyte	white blood cell
lines of convergence	a two- dimensional view of the intersection of lines formed by drawing a line through the main axis of at least two drops of blood that indicates the general area of the source of the blood spatter.
livor mortis	the pooling of the blood in tissues after death; causes discoloration
Locard exchange principle	there is always a cross transfer of evidence between a suspect and victim or locale
logic	the process of forming conclusions from assumptions and known facts
loop	a fingerprint pattern in which the ridge enters from one side, curves, then exits on the same side
manner of death	one of four means by which someone dies (i.e., natural, accidental, suicidal, or homicidal)
mechanism of death	the specific body failure that leads to a person's death

medulla	the spongy core of a hair fiber that gives it flexibility
melanin granules	bits of pigment found in the cortex of a hair
metabolite	a specific product of a substance, formed by chemical processes in the body
micrometer	one-millionth of a meter, or one thousandth of a millimeter
mineral fiber	a collection of mineral crystals formed into a recognizable pattern
minutiae	the combination of details in the shapes and positions of ridges in fingerprints that make each unique; also called ridge characteristics
mitochondrial DNA	DNA found only in the mitochondria that is inherited only from the mother
mitochondrion	an organelle found in large numbers in most cells, in which the processes of cellular respiration and energy production occur
monomer	a small molecule that may bond to other monomers to become a polymer
morphology	form and structure
muzzle	the end of the barrel where the projectile exits a firearm
narcotic	an addictive drug, such as opium, that relieves pain, alters mood and behavior, and causes sleep or feelings of mental numbness
natural fiber	a fiber produced naturally and harvested from animal, plant, or mineral sources
neutron activation analysis	a method of analysis that determines composition of elements in a sample
obliteration	removal of writing by physical or chemical means
observation	what a person perceives using his or her senses
obsidian	volcanic glass
odontology	in forensics, the examination of bite marks and dental identification of corpses
opinion	personal belief founded on judgment rather than on direct experience or knowledge
ossification	a function of the body that turns soft cartilage into hard bone by depositing minerals
osteobiography	the physical record of a person's life as told by their bones
osteoblast	a type of cell capable of migrating and depositing new bone
osteoclast	a bone cell involved in the breaking down of bone and the removal of wastes
osteocyte	an osteoblast that becomes trapped in the construction of bone; also known as a living bone cell
osteoporosis	weakening of bone, which may happen if there is not enough calcium in the diet
paper bindle	a folded paper used to hold trace evidence
patent fingerprint	a visible fingerprint that happens when fingers with blood, ink, chalk, grease or dirt on them touch a surface and transfer the pattern of their fingerprint to that surface
patent impression	two-dimensional impressions that are already visible
pathology	the investigation of sudden, unexplained, or violent death

PCR (polymerase chain reaction)	a method used to make millions of copies of a specific segment of DNA from a very small amount of DNA
perception	interpreting information received from the senses
pistol	a hand-held firearm
plasma	the fluid portion of blood; can be obtained by centrifuging a sample of whole blood
plastic	A substance that will flow under heat and pressure and therefore can be molded into many shapes
plastic fingerprint	a three-dimensional fingerprint made in soft material such as clay, soap, paint, putty, or wax
plastic impressions	three-dimensional impressions cast in soft materials, such as soil and snow or blood
point of origin	a three- dimensional view formed using lines of convergence and angles of impact of at least two different drops of blood that indicates the location of the source of the blood spatter
poison	a naturally occurring or manufactured substance that can cause severe harm or death if ingested, inhaled, or absorbed through the skin; poisons are a subgroup of toxins
polygraphy	The use of a lie detector
polymer	a large molecule composed of long chains of smaller repeating units
polypeptide	a biochemical polymer formed by linking amino acids into long chains
presumptive	a screening test that can presume (but not confirm) the presence of a substance if positive, or verify the absence of a substance if negative
primary crime scene	the location where the crime took place
probable cause	situation in which a reasonable and prudent person, viewing available information, can conclude that a crime has been committed and that the suspect committed it
pupa (plural pupae)	the stage in an insect's life cycle when the larva forms a capsule around itself and transitions into its adult form
putrefaction	the decomposition of organic matter by microorganisms, resulting in production of foul-smelling matter
questioned document	any signature, handwriting, typewriting, or other written mark whose source or authenticity is in dispute or uncertain
red blood cells	donut-shaped cells that carry oxygen throughout the body
refraction	the change in the direction of light as it changes speed when moving from one substance into another
refractive index	a measure of how light bends as it passes from one substance to another
restriction enzyme	a special protein that targets a specific base sequence and cuts DNA into smaller fragments
revolver	a pistol with a revolving cylinder
ridge pattern	the recognizable pattern of ridges found in the end joints of fingers that form lines on the surface of objects. They fall into three categories: arches, loops, and whorls

rifle	a firearm that has a long barrel; a long gun
rifling	the spiral pattern of lands and grooves in the barrel of a firearm
rigor mortis	the stiffening of the skeletal muscles shortly after death
satellite drop of blood	secondary drops formed when some blood breaks free from the main contact drop of blood
secondary crime scene	a location other than the primary crime scene, but that is in some way related to the crime, where evidence is found
secondary transfer	the transfer of evidence such as a fiber from a source (for example, a carpet) to a person (suspect), and then to another person (victim)
secretor	A person whose blood type antigens are also found in other body fluids
semi-automatic	a pistol with a clip-fed mechanism that fires one shot per pull of the trigger; the empty cartridge ejects and the next cartridge advances automatically
serology	the study of blood or other bodily fluids
shell casing	the metal (usually brass) housing for the gunpowder of a firearm
silicon dioxide	(SiO ₂) the chemical name for silica
skeletal trauma analysis	the investigation of the marks on bone and their condition to uncover a potential cause of death
sole	(outsole) the pattern on the bottom of a piece of footwear
statutory law	legislative acts declaring, commanding, or prohibiting something
stimulant	psychoactive drug which induces temporary improvements in mental and/or physical functions
STR (short tandem repeat)	side by side repeats of short DNA sequences two to five base pairs in length, with varying numbers of repeats between individuals
synthetic fiber	a fiber produced from a raw material such as coal or wood pulp that is spun together in a factory
textile	a flexible, flat material made by interlacing yarns or threads
tire groove	a depression in the tread pattern
tire rib	a ridge of tread running down the tread area and around the circumference of the tire
tool mark	any impression, scratch or abrasion made when contact occurs between an object such as a tool and another object
toxicity	the degree to which a substance is poisonous or can cause injury
toxicology	the study of the adverse effects of chemical toxins on living organisms
toxin	a poisonous substance naturally produced by certain plants, animals, and bacteria that is capable of causing disease or death in humans
trace evidence	small but measurable amounts of physical or biological material found at a crime scene
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track width	the distance from the center of the thread pattern on the left tire to the center of the tread pattern on the corresponding right tire

trajectory	the path of flight of a projectile
tread pattern	the unique design of a tire's surface
turning diameter	a measure of how tight a circle can be driven by a vehicle
VNTR (variable number of tandem repeats)	side by side repeats of short DNA sequences 9 to 80 base pairs in length, with varying numbers of repeats between individuals
warp	the lengthwise yarn in a weave pattern
watermark	a recognizable image or pattern in paper that appears as various shades of lightness/darkness when viewed by transmitted light; often used as a security feature
weft	the crosswise yarn in a weave pattern
wheel base	the distance from the center of the front axle on a vehicle to the center of the rear axle
white blood cells	cells that police the body destroying foreign materials
whorl	a fingerprint pattern that resembles a bull's-eye
yarn	a continuous stand of fibers that have been spun together



Keep this dictionary in the Class Documents section of your Forensic Science Binder.